Maize variety choice simplified

Getting maize variety choice wrong can be costly in terms of missed opportunity to produce the maximum feed energy from the crop. The LG Variety Selection Guide aims to make it easier for you to interpret the valuable independent data available to help you make the correct variety choice.

This guide includes data on the new varieties added to the 2021 BSPB/NIAB Descriptive Lists for Forage Maize and Anaerobic Digestion, allowing comparison to those already established in the market.

Independent data from BSPB/NIAB

This guide uses the Descriptive List data which is created from independent trials jointly carried out by NIAB and the British Society of Plant Breeders (BSPB). Varieties usually complete five years of testing, at up to nine locations within the UK. The data represents a varying range of growing and seasonal conditions, giving a very good indication of each varieties’ potential.

NEW!

The new Maize Manager app

Do you want an easy way to evaluate your maize crops’ performance? Then try out our brand new Maize Manager App. The Feed Manager section gives a useful overview of the feed potential in terms of both MJ of energy and the financial value in terms of output.

Download from the Apple or Google store.

We hope you will find this guide useful in helping you make an informed decision as to which maize varieties best suit both your growing conditions and expected feeding value of the resulting crop.

Cover image courtesy of Aaron Fielding.
GET THE RIGHT MATURING MAIZE FOR YOU

Using the LG Heat Map Tool

The LG Heat Map Tool has been developed by Limagrain, in conjunction with The Met Office to provide quick and easy advice for selection of appropriate maturing varieties. The tool uses the internationally recognised Ontario Heat Unit (OHU) system to show the average heat units available for maize to be grown in a location. Maize varieties differ in the number of heat units required to reach maturity and this affects their suitability to be grown in different locations. As a guide:

<table>
<thead>
<tr>
<th>Maturity Group</th>
<th>FAO Range</th>
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<tbody>
<tr>
<td>UNSUITABLE</td>
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<tr>
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<td>FAO 170-200</td>
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<td>LATE</td>
<td>FAO 200-220</td>
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<tr>
<td>VERY LATE</td>
<td>FAO 220-250</td>
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</table>

The LG Heat Map

The dark red areas have plenty of heat units available for growing maize, whilst the dark blue areas are unsuitable due to lack of sufficient heat units. Marginal areas requiring earlier maturing varieties are shown in the bordering lighter colours.

Avoiding soil compaction issues at harvest

Having to wait for later maturing maize varieties to be ready to harvest can cause serious problems with soil compaction, which results in surface water run-off and erosion in wet autumn conditions. This can be avoided by choosing a suitably early maturing variety to harvest in September, allowing time for field work to be carried out, or to establish a follow-on crop.

Find the Maturity Manager section in the new app!

It is critical to choose the right maturity range for your situation. You must avoid harvesting in unpredictable conditions in October that could lead to compaction and damage soil structure.

The Maturity Manager section of our new app can provide you with the recommended FAO range for your farm by simply inputting your postcode. Further advice on suitable varieties to use within this maturity range is also available.

Download from the Apple or Google store.
<table>
<thead>
<tr>
<th>Pages</th>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 - 14</td>
<td>Security of harvest</td>
<td>Early maturing varieties that reduce risk of a late harvest, providing a secure performance from a limited area available for maize.</td>
</tr>
<tr>
<td>16 - 19</td>
<td>Protecting your crop</td>
<td>Seed treatment options to promote rapid growth or to protect against bird damage and fungal attack.</td>
</tr>
<tr>
<td>20 - 21</td>
<td>Good practice</td>
<td>Husbandry advice for undersowing or for good management of stubbles and crops following maize.</td>
</tr>
<tr>
<td>22 - 30</td>
<td>Maximum profitability</td>
<td>Varieties that offer improved feeding efficiency that can reduce purchased-in feed costs and maximise crop output.</td>
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<tr>
<td>15 &amp; 31</td>
<td>Specialist agronomy or end use</td>
<td>Varieties that are adapted for use under plastic cover (page 15) Crops to be harvested for dried or crimped grain (page 31).</td>
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<tr>
<td>32 - 38</td>
<td>Maximum yield</td>
<td>High yielding crops that maximise yield per hectare, typically later maturing varieties suitable for high potential sites.</td>
</tr>
<tr>
<td>39</td>
<td>Further advice</td>
<td>Planning for a harvest with optimal results.</td>
</tr>
</tbody>
</table>
Charts visually show maturity and yield data

Charts and tables are divided into Maturity Groups to enable easy comparison between similar maturing varieties. The tables provide useful independent data on both agronomics and feed quality for maize. Agronomy information is included for yield, early vigour and disease resistance. Feed quality information includes detail on both starch, energy yield and content. In addition, digestibility of maize is shown by the CWD scores.

Useful information to aid your variety decision

You can check your appropriate maturity group by either downloading our Maize Manager app, or using our Heat Map Tool, available at [www.lgseeds.co.uk/heat-map](http://www.lgseeds.co.uk/heat-map).

Tables provide the full set of trials data

### Maturity and FAO check

The dark red areas have plenty of heat units available for growing maize, whilst the dark blue areas are unsuitable due to lack of sufficient heat units. Marginal areas requiring earlier maturing varieties are shown in the bordering lighter colours.

### First Check Varieties - Ranked by Agressiveness

<table>
<thead>
<tr>
<th>Maturity Group</th>
<th>Variety</th>
<th>Maturity Class *</th>
<th>FAO Rating *</th>
<th>DM% (at harvest)</th>
<th>TDR/LTR to Harvest (at Harvest)</th>
<th>VIGOUR (at harvest)</th>
<th>LEAF RATING (at harvest)</th>
<th>EARLY VIGOUR (at harvest)</th>
<th>STANDING (at harvest)</th>
<th>LODGING (%)</th>
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<td>2020</td>
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*Denotes only one year of eyespot data

New in 2021

* MC = Limagrain estimation of maturity class and FAO rating
* FAO = Lahmora's estimate of days earlier / later to harvest than Glory, the BSPB/NIAB early control variety
Relative Dry Matter Yield v DM%  
BSPB/NIAB Descriptive List for Forage Maize 2021: Less Favourable Sites

Varieties for Less Favourable Sites

Red varieties
- First Choice
- Second Choice

Maturity Group | FAO Range
---|---
Very Late | FAO 220-250
Late | FAO 200-220
Early | FAO 170-200
Very Early | FAO 140-170
Early | FAO 120-150
Very Late | FAO 90-120

Varieties
- FARMUNOX
- SY NORDICSTAR
- ASGAARD
- ABSALON
- BONNIE
- ASGAARD
- CONCLUSION
- ABILITY
- RESOLUTE
- PROSPECT
- AMBITION
- FIELDSTAR
- PINNACLE
- TROOPER
- GLORY
- RODRIGUEZ KWS
- RGT STEWAXX
- AURELIIUS KWS
- AUTENS KWS
- LIROYAL
- MADONIAS
- RGT OXXGOOD
- KWS CALVINI
- ES LOVELY
- PEREZ KWS
- RGT OXXGOOD
- ES LOVELY
- ES REMINGTON
- AUGUSTUS KWS
- CITO KWS
- EMMERSON
- RUBIERA KWS
- RGT DUXXBURY
- KWS ARTIKUS
- KWS ARVID

FAO Rating
220 - 140

DM (%)
30 - 38
# RELATIVE DRY MATTER YIELD AND AGRONOMIC CHARACTERISTICS

## BSPB/NIAB Descriptive List for Forage Maize 2021: Less Favourable Sites

### First Choice Varieties - Ranked by Earliness

<table>
<thead>
<tr>
<th>Variety</th>
<th>Maturity Class</th>
<th>FAO Rating</th>
<th>DM% at harvest</th>
<th>Earlier/Later to Harvest (Days +/- Glory)</th>
<th>Yield Data</th>
<th>Agronomic Data</th>
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<tbody>
<tr>
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<td>Relative DM Yield (%)</td>
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### Very Early

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<td>30.8</td>
<td>-12</td>
<td>18.3</td>
<td>106</td>
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</tbody>
</table>

**New in 2021**

* MC = Limagrain estimation of maturity class and FAO rating
* Denotes only one year of eyespot data

### Maturity

Choose varieties with an appropriate maturity. The lower the FAO rating, the earlier the variety will mature.

### Yield Data

**Dry matter yield**

Earlier varieties ensure crop maturity, but may have lower yields.

### Agronomic Data

**Early vigour**

A strong, vigorous plant will quickly establish a good root system and leaf canopy.

**Standing**

Ability to remain upright at harvest.

**Lodging**

% Plants leaning more than 30 degrees at harvest.

**Leaf senescence**

A higher score means plants remain green and healthy up to harvest. Lower scoring varieties may suffer from diseases like Fusarium.

**Eyespot rating**

Select varieties with a score above 5.5 when eyespot is expected to be a problem. Fungicide sprays can control the disease for varieties with a low score.

---

Selecting varieties by yield only may result in a significantly later harvest. Don’t rule out varieties with a lower yield but excellent feeding quality.
RELATIVE STARCH YIELD v DM%  
BSPB/NIAB Descriptive List for Forage Maize 2021: Less Favourable Sites
### RELATIVE STARCH YIELD AND CONTENT

**BSPB/NIAB Descriptive List for Forage Maize 2021: Less Favourable Sites**

**First Choice Varieties - Ranked by Starch Yield**

Varieties are ranked within maturity groups by total starch tonnes produced per hectare.

**Starch % at harvest**

Varieties with a high starch content are especially important in rations with a lower percentage of maize fed (<50%). Maize starch balances the rapidly available energy and higher protein levels found in the grass silage.

**Why is starch important?**

Starch is a fundamental component of maize silage, providing ‘rumen fermentable energy’ which fuels the microbial population in the rumen.

A proportion of starch, known as bypass starch, is absorbed directly by the animal as glucose. Maize starch is a ‘safer’ source of energy than feed ingredients such as cereals, as fermentation rates can be slower, reducing the risk of acidosis.

### Starch Data

<table>
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<tr>
<th>MATURITY GROUP</th>
<th>VARIETY</th>
<th>MATURITY CLASS *</th>
<th>FAO RATING *</th>
<th>DM% (at harvest)</th>
<th>EARLIER/ LATER TO HARVEST (# Days +/- Glory)</th>
<th>STARCH YIELD (t/ha)</th>
<th>RELATIVE STARCH YIELD (%)</th>
<th>STARCH (% at harvest)</th>
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</table>

* MC = Limagrain Estimation of Maturity Class and FAO rating   
#  Limagrain estimate of days earlier / later to harvest than Glory, the BSPB/NIAB early control variety.

A high starch content is a good indicator of cob maturity at harvest.
BSPB/NIAB Descriptive List for Forage Maize 2021: Less Favourable Sites

**RELATIVE ME YIELD v DM%**

**INTERMEDIATE EARLY**

**LATE**

**VERY EARLY**

Red varieties

First Choice

Second Choice

Relative ME Yield

Maturity Group | FAO Range
--- | ---
UNSUITABLE | FAO < 140
VERY EARLY | FAO 140-170
EARLY | FAO 170-200
LATE | FAO 200-220
VERY LATE | FAO 220-250

**Maturity Group**

**FAO Range**

**43**

**31 32 33 34 35 36 37 38**

**Relative ME Yield**

**DM (%)**

**FAO Rating**

**110**

**108**

**106**

**104**

**102**

**100**

**98**

**96**

**94**

**92**

**90**

**30**

**32**

**33**

**34**

**35**

**36**

**37**

**38**

**110**

**108**

**106**

**104**

**102**

**100**

**98**

**96**

**94**

**92**

**90**

**220**

**200**

**170**

**140**

**CONCLUSION**

**RESOLUTE**

**PROSPECT**

**AVITUS KWS**

**KWS ARVID**

**KWS ARTIKUS**

**RGT DUXXBURY**

**EMMERSON**

**RGT OXXGOOD**

**ES REMINGTON**

**ES LOVELY**

**GLORY**

**TROOPER**

**AMBIATION**

**PINNACLE**

**FIELDSTAR**

**AURELIUS KWS**

**LIROYAL**

**STEWAXX**

**RODGUEZ KWS**

**MADONIAS**

**PEREZ KWS**

**REASON**

**KWS CALVINI**

**CONCLUSION**

**ABILITY**

**FARMUNOX**

**GATSBY**

**ASGAARD**

**BONNIE**

**ABSALON**

**SY NORDICSTAR**

**ES LEGOLAS**

**ES NORDICSTAR**

**FARMUNOX**

**GATSBY**

**ASGAARD**

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**SY NORDICSTAR**

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**CONCLUSION**

**PROSPECT**

**AVITUS KWS**

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**AMBIATION**

**PINNACLE**

**FIELDSTAR**

**AURELIUS KWS**

**LIROYAL**

**STEWAXX**

**RODGUEZ KWS**

**MADONIAS**

**PEREZ KWS**

**REASON**

**KWS CALVINI**

**CONCLUSION**

**ABILITY**

**FARMUNOX**

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**ASGAARD**

**BONNIE**

**ABSALON**

**SY NORDICSTAR**

**ES LEGOLAS**

**ES NORDICSTAR**

**RESOLUTE**

**CONCLUSION**

**PROSPECT**

**AVITUS KWS**

**KWS ARVID**

**KWS ARTIKUS**

**RGT DUXXBURY**

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**RGT OXXGOOD**

**ES REMINGTON**

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**GLORY**

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**AMBIATION**

**PINNACLE**

**FIELDSTAR**

**AURELIUS KWS**

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**STEWAXX**

**RODGUEZ KWS**

**MADONIAS**

**PEREZ KWS**

**REASON**

**KWS CALVINI**

**CONCLUSION**

**ABILITY**

**FARMUNOX**

**GATSBY**

**ASGAARD**

**BONNIE**

**ABSALON**

**SY NORDICSTAR**

**ES LEGOLAS**

**ES NORDICSTAR**
### ME YIELD AND CELL WALL DIGESTIBILITY

**BSPB/NIAB Descriptive List for Forage Maize 2021: Less Favourable Sites**

**FIRST CHOICE VARIETIES – RANKED BY ME YIELD**

**ME YIELD** (MJ/ha at harvest)

**RELATIVE ME YIELD (%)**

**ME** (MJ/kg DM of fresh plant at harvest)

**Cell Wall Digestibility (%) minus 50**

**YEAR LISTED**

<table>
<thead>
<tr>
<th>VARIETY</th>
<th>MATURITY GROUP</th>
<th>MATURITY</th>
<th>ME YIELD</th>
<th>RELATIVE ME YIELD</th>
<th>ME</th>
<th>Cell Wall Digestibility</th>
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**Energy Data**

**ME yield**

ME is important in rations with a high maize silage inclusion rate >50%. Varieties are ranked within maturity groups by ME yield.

**ME (MJ/kg)**

Feeding performance and animal output is improved using varieties with the highest energy value (MJ/kg). ME content is directly impacted by the starch content and fibre digestibility (CWD) of the plant.

**Digestibility Data**

**Cell wall digestibility (CWD)**

Fibre digestibility impacts the amount of energy that can be derived from the rest of the maize plant that is not starch, i.e. the stover (leaves and stem). The digestibility of the stover is indicated by the cell wall digestibility.

**CWD score** is expressed as a percentage. CWD values have been converted to a 1-10 range, each unit representing an increase of 1%.

A 1% increase in CWD increases dry matter intake by 0.17kg per day, increasing milk yield by 0.25kg per day (Oba and Allen, 1999).

---

Selecting for high energy density (ME content) will improve dry matter intake and animal performance at feeding.
FEEDING QUALITY: CELL WALL DIGESTIBILITY V STARCH CONTENT

BSPB/NIAB Descriptive List for Forage Maize 2021: Less Favourable Sites

VARIETIES FOR LESS FAVOURABLE SITES

STARCH CONTENT v CELL WALL DIGESTIBILITY

CONCLUSION

PROSPECT

TROOPER

Pinnacle

AMBIION

LIROYAL

GLORY

KWS ARTIKUS

AUGUSTUS KWS

RUBIERA KWS

CITO KWS

RODRIGUEZ KWS

KWS ARVID

KWS CALVINI

AVITUS KWS

KWS ARTIKUS

RGT OXXGOOD

RGT STEWAXX

GATSBY

TROOPER

FIELDSTAR

GLORY

PROSPECT

CONCLUSION

STARCH CONTENT (%)

Cell Wall Digestibility (%)

ABSALON

ASGAARD

BONNIE

RESOLUTE

SY NORDICSTAR

GATSBY

FIELDSTAR

REASON

AMBIION

LIROYAL

GLORY

KWS ARTIKUS

AUGUSTUS KWS

RUBIERA KWS

CITO KWS

RODRIGUEZ KWS

KWS ARVID

KWS CALVINI

AVITUS KWS

KWS ARTIKUS

RGT OXXGOOD

RGT STEWAXX

GATSBY

TROOPER

FIELDSTAR

GLORY

PROSPECT

CONCLUSION

STARCH CONTENT (%)

Cell Wall Digestibility (%)

First Choice

Second Choice

Red varieties

30 31 32 33 34 35 36 37

37.0 37.5 38.0 38.5 39.0 39.5 40.0 40.5 41.0 41.5

VARIETIES FOR LESS FAVOURABLE SITES
**FEEDING QUALITY EXPLAINED**

Varieties high in both starch and digestible fibre perform best

Where to use starch or digestible fibre type varieties in the ration

**Benefits of digestible varieties high in starch:**
- Higher energy content
- A more productive and balanced feed
- Improved dry matter intake
- Better feed efficiency
- Better for animal health
- Improved gas yield for AD

**Avoid using varieties with low digestibility and starch as:**
- Low digestibility
- Low starch
- Poor productivity
- Low in energy content

**Varieties for less favourable sites**

- E.Legolas (26% Starch)
- MONTY

**Increasing digestibility**

- Grass part of the ration
- Maize part of the ration

**Increasing starch content**

**Choose varieties in the green area as they are digestible and high starch**

**Cell Wall Digestibility (%)**

- Starch Content (%)
### Second Choice Varieties for Less Favourable Sites

**BSPB/NIAB Descriptive List for Forage Maize 2021: Less Favourable Sites**

Varieties are usually made 'Second Choice' due to:  
- Their low feeding qualities  
- Below average yield potential  
- Have a significant agronomic weakness, eg. Poor Standing Power

| Maturation Group | Variety | Maturity Class \(*\) | FAO Rating \(*\) | DM\% (At harvest) | DM Yield (t/ha) | REL DM Yield (%) | Early Vigour \((9=good, 1=poor)\) | Standing \((9=good, 1=poor)\) | Lodging (%) | Leaf Senescence \((9=good, 1=poor)\) | Eyespot Rating \((9=good, 1=poor)\) | Starch Yield (t/ha) | REL Starch Yield % | Starch (% at harvest) | ME Yield (MJ/ha at harvest) | REL ME Yield % | ME MJ/kg DM of fresh plant at harvest | Cell Wall Digestibility ** | Year Listed |
|------------------|---------|----------------------|-----------------|-------------------|----------------|-----------------|------------------------|------------------------|----------------|------------------------|------------------------|----------------|----------------|----------------|----------------|---------------|----------------|-----------------|
| **Very Early**   | EMMERSON | 12 | 150 | 37.2 | 10 | 16.4 | 95 | 6.8 | 7.6 | 1.8 | 5.3 | 1.9 | 5.7 | 100 | 32.9 | 201,191 | 100 | 11.6 | 9.0 | 2015 |
|                  | RUBIERA KWS | 10 | 160 | 35.5 | 4 | 16.2 | 94 | 7.0 | 6.1 | 5.4 | 5.6 | 5.4 | 5.9 | 103 | 36.2 | 192,067 | 95 | 11.9 | 9.6 | 2015 |
|                  | KWS ARTIKUS | **NEW** | 10 | 160 | 35.3 | 4 | 17.4 | 101 | 7.3 | 5.8 | 6.2 | 5.6 | \* | 6.0 | 105 | 34.6 | 185,976 | 92 | 11.6 | 8.3 | 2020 |
|                  | RGT DUXBURY | 10 | 160 | 35.2 | 3 | 16.0 | 93 | 7.0 | 7.3 | 2.6 | 5.6 | 5.5 | 5.5 | 99 | 34.6 | 189,627 | 94 | 11.6 | 9.0 | 2015 |
|                  | KWS ARVID | **NEW** | 10 | 170 | 35.1 | 3 | 17.7 | 102 | 7.4 | 4.4 | 9.5 | 5.7 | \* | 6.1 | 107 | 34.5 | 208,430 | 104 | 11.8 | 9.8 | 2020 |
| Mean of the year 4 & 5 varieties | | | | 33.5 | | 17.3 | 100 | 7.2 | 7.0 | 2.7 | 6.7 | | | | | | | | |
| **Early**        | AVITUS KWS | 10 | 160 | 34.8 | 2 | 18.1 | 105 | 7.4 | 4.8 | 8.5 | 5.8 | 5.9 | 6.2 | 109 | 34.5 | 211,293 | 105 | 11.7 | 8.7 | 2018 |
|                  | REASON | 10 | 160 | 34.7 | 1 | 17.2 | 100 | 6.8 | 6.0 | 5.6 | 6.3 | 3.5 | 5.6 | 98 | 32.3 | 200,985 | 100 | 11.7 | 9.4 | 2016 |
|                  | PEREZ KWS | 10 | 170 | 34.2 | 0 | 17.2 | 100 | 7.4 | 5.5 | 6.9 | 6.3 | 4.8 | 5.9 | 103 | 34.0 | 199,043 | 99 | 11.6 | 8.0 | 2015 |
|                  | YUKON | 9 | 170 | 34.0 | -1 | 17.1 | 99 | 6.8 | 7.5 | 1.9 | 6.5 | 4.6 | 5.9 | 104 | 34.7 | 196,988 | 98 | 11.5 | 7.4 | 2012 |
|                  | ES LOVELY | 9 | 170 | 33.8 | -2 | 17.0 | 98 | 7.1 | 7.9 | 0.9 | 6.3 | 3.6 | 5.7 | 100 | 33.6 | 196,037 | 97 | 11.6 | 8.2 | 2016 |
|                  | RGT OXXGOOD | 9 | 180 | 33.6 | -3 | 17.3 | 100 | 7.0 | 7.3 | 2.4 | 6.4 | 5.8 | 5.7 | 100 | 32.7 | 201,355 | 100 | 11.6 | 9.2 | 2015 |
|                  | ES REMINGTON | 9 | 180 | 33.2 | -4 | 16.7 | 97 | 7.3 | 7.8 | 1.3 | 6.8 | 4.0 | 5.3 | 93 | 31.5 | 190,354 | 95 | 11.4 | 7.5 | 2014 |
|                  | AUTENS KWS | 8 | 180 | 32.8 | -5 | 17.5 | 101 | 7.2 | 4.6 | 9.1 | 6.5 | 5.2 | 5.6 | 99 | 32.1 | 202,184 | 100 | 11.6 | 8.5 | 2017 |
|                  | AURELIUS KWS | 8 | 190 | 32.5 | -6 | 17.8 | 103 | 7.4 | 6.0 | 5.7 | 6.4 | 4.6 | 5.6 | 98 | 31.4 | 204,187 | 101 | 11.5 | 8.1 | 2016 |
| **Late**         | ES LEGOLAS | 6 | 210 | 30.8 | -12 | 18.2 | 105 | 7.1 | 7.6 | 1.8 | 7.8 | 6.6 | 4.5 | 80 | 24.9 | 199,981 | 99 | 11.0 | 6.8 | 2019 |

**NEW** New in 2021  **Cell Wall Digestibility (%)** minus 50  **MC** = Limagrain Estimation of Maturity Class  \# Limagrain estimate of days earlier / later to harvest than Glory, the BSPB/NIAB early control variety  \* Denotes only one year of eyespot data
Using plastic cover

The ‘under plastic’ system was developed in Ireland to enable farmers in more marginal climates to grow maize successfully. In the UK, it can be of benefit in advancing crop maturity in very marginal areas, such as Scotland and areas of high altitude and rainfall, in England and Wales.

The plastic cover acts like a greenhouse and warms the seedbed to 8˚C sooner, thereby encouraging seeds to germinate and become established earlier in the spring. It increases the total heat accumulation of the growing crop bringing forward maturity. This facilitates either an earlier harvest or the growing of a later variety with a higher yield potential.

Agronomy

Plastic cover adds an extra growing cost of around £250/hectare. This is partially offset by the use of a lower seed rate of 100,000 seeds/ha (40,000 seeds/acre).

Good weed control prior to sowing is vital. A pre-emergence herbicide spray is applied at the time of sowing but after this, options are limited due to the plastic cover.

Variety selection for under plastic

The only source of Independent data on how maize varieties perform under plastic is DAFM (Department of Agriculture, Food and the Marine) in Ireland. The LG varieties Ambition, LG31235 and LG30211 are fully recommended by DAFM for use in plastic covered systems.
COMMON PESTS IN MAIZE

PESTS, DISEASES AND SEED TREATMENTS

Pests are most problematic during the early emergence and establishment phase

Damage caused by birds

Maize is most vulnerable to bird damage during early emergence, up to 3-4 leaf phase. Rooks and other corvids can pick out newly sown seeds or small seedlings, working down the row and causing substantial losses.

Bird Control

Key to avoiding this issue is to ensure that no grains are left lying on the surface and that the seed is drilled to the correct depth and well covered, so as not to attract attention.

Avoid drilling an isolated crop of maize in a high risk area, such as near woodland or a rookery. It may be possible to drill seed to a deeper depth of 7-10cm to deter rooks from digging up the seed, however sowing at this depth can be problematic for the seed to germinate successfully, especially in heavier soils.

Always check that soil temperature has consistently reached 10°C at drilling depth for at least 4 consecutive days before drilling and check the medium term weather forecast will remain warm.

Damage caused by insects

Wireworm

Commonly found when maize is sown for the first three years after ploughing grass. The larvae are yellow, legless and up to 35mm long. They feed on the grass root debris and the new maize plants up to 5-6 leaf stage. Damage is seen in patches of the field with affected plants struggling or dying.

Frit Fly

Causes damage up to the 4 leaf stage. Common after an initially warm period encouraging egg laying by the adult fly. Larvae are pale yellow and 4mm long and eat across the leaf veins. Plants either die or become stunted with twisted leaves.

Insect Control

Cultivating early to temporarily remove the insects feed source, combined with sowing later into a warm damp seedbed can help.

The insecticide seed treatment Force can help limit damage, but will not provide 100% control. Adding the biological growth enhancer Starcover can help the crop to develop rapidly and grow away from the attack. See page 18 for more details.
COMMON DISEASES IN MAIZE

Diseases are most problematic after flowering and in the lead up to harvest

Eyespot (Kabatiella Zeae)

Eyespot is particularly prevalent in cooler summers with high humidity with spores spread by the wind. Infection develops early after flowering and if left unchecked it can have a devastating effect on both crop yield and quality.

Early signs are appearance of small leaf spots with a yellow halo and can lead to the entire plant dying off before filling of the cob.

Cultivation & Sprays

Eyespot can be carried over in the stubble, so ensure it is well incorporated into the soil and practice good crop rotation where possible. Timely application of an appropriate fungicide spray can control the disease.

Variety Tolerance

Varieties with good eyespot tolerance are available. See agronomy data on pages 7, 23 and 37.

Stalk rot (Fusarium)

Occurs immediately before harvest and caused by the fungus Fusarium graminearum. Fusarium can lead to the sudden death of the plant and weakening of the stem causing lodging in the field. This is problematic as it creates difficulties at harvest and can also result in very high dry matter silage that is difficult to conserve in the clamp.

Stalk Rot Control

Fusarium cannot be controlled by using fungicide sprays. The most effective way to avoid this problem is to choose varieties that have good resistance to this disease.
Starcover from LG Seeds: A new generation of biological seed treatment

Getting maize crops established in good conditions and up and away quickly, are the foundations of a successful crop.

Improved root development

A unique plant extract in Starcover encourages the rapid development of a strong root system that enables maize to flourish during the difficult early growth phase and to continue to grow strongly throughout the season. Root structure is visibly bigger with more defined root hairs on Starcover treated maize plants, helping to increase uptake of both moisture and nutrients.

Plant Growth Promoting Rhizobacteria (PGPR)

PGPR colonise the root zone and stimulate root hair development. Through a symbiotic relationship, the bacteria increase the availability of soil nutrients phosphorus, nitrogen and other trace elements to the plant. Plants treated with Starcover tend to amass more growth in the early pre-flowering stages, leading to a better developed adult plant.

Starcover seed treatment improves the efficiency of the growing plant and reduces the risks associated with growing a maize crop.

A stronger, healthier plant is more likely to withstand environmental stresses during the growing season, limiting the risk of reduced productivity. Trials have shown that Starcover treated plants have an increased starch, energy and dry matter yield.

Starcover is available in combination with fungicide only or if an insecticide option is needed, with Force.
KORIT® PRO is a new seed treatment formulation available on all LG maize varieties.

Its unique formulation provides protection from birds and soil-borne, damping off diseases. It also contains micronutrients to aid early plant development, assisting the plant to grow in this crucial stage.

**Improved Protection:**

- Bird repellent against crows, rooks and pheasants
- Fungicide protection against damping off diseases including Pythium, Fusarium
- Root necrosis protection against Rhizoctonia

**Improved Growth:**

- Increased rooting power, with plants developing a healthy and productive root system
- Better plant health and anchoring up to harvest
- Inclusion of manganese to aid chlorophyll formation and photosynthetic action
- Inclusion of zinc to aid protein formation, particularly beneficial if soils become cold or wet
- Korit® PRO helps plant development, with a healthy and productive root system, for the best possible start, whilst limiting damage from birds.

**Successful establishment is reliant upon 4 main factors:**

- Sufficient moisture being available; ensure a fine seedbed with soil in contact to seed
- A warm and rising soil temperature for four or more days of a minimum 10°C at drilling depth
- Drilling to an appropriate soil depth of between 5-8cm and not too deep in heavy soils
- Drilling into well aerated soils, maize will not thrive in compacted soils without oxygen
Growing a crop of maize typically means sowing in April/May and harvesting in September/October. This can leave a period of up to six months where there’s an opportunity to use a second crop to gain extra production.

This second crop can be established alongside the maize by undersowing or if early maturing varieties are used, there should be sufficient time to sow a crop into the maize stubbles (see page 21).

Benefits of Undersowing

Good Environmental Practice

Undersowing maize crops with grass helps prevent soil erosion and the loss of valuable nutrients over the winter months. Damage to soil structure by harvest machinery can also be reduced. The presence of an established understorey of grass will stabilise ground conditions in the event of a wet harvest.

Opportunity for Extra Production

An undersown crop of grass can be grazed by livestock over the winter or cut for silage the following spring giving year round production.

Recommended mixtures and sowing time and rates

The table below gives typical sowing rates and mixture types to use when undersowing. For best establishment, seed should be drilled rather than broadcast and kept 15cm away from the maize plants to avoid any detrimental yield effects.

<table>
<thead>
<tr>
<th>Maize Crop Growth Stage</th>
<th>Sowing rate</th>
<th>Mixture type</th>
<th>Variety / mixture names</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 4 leaf stage</td>
<td>6kg/Ha</td>
<td>A mixture of meadow fescue type festulolium and tall fescue type festulolium</td>
<td>LG Hold Fast</td>
</tr>
<tr>
<td>4 to 6 leaf stage</td>
<td>10kg/Ha</td>
<td>Fast growing ryegrass</td>
<td>LG After Maize Mixture</td>
</tr>
<tr>
<td>6 to 8 leaf stage</td>
<td>15kg/Ha</td>
<td>Fast growing ryegrass</td>
<td>LG After Maize Mixture</td>
</tr>
</tbody>
</table>
If an early maturing maize variety has been chosen, winter crops such as cereals may be sown after harvest. Maize crops may also be undersown with grass as described on page 20.

Stubble Management and Cropping Options

It is quite common for maize stubbles to be left bare over the winter. This is not only a missed opportunity to produce more forage, but also can lead to soil related problems such as surface water run-off, soil erosion and loss of valuable soil nutrients.

Cultivating with a chisel plough across the stubble rows will help remove surface capping and prevent surface water run off and erosion. However, sowing a crop such as Humbolt forage rye or Westerwolds ryegrass offer far greater benefits.

<table>
<thead>
<tr>
<th>Prevent run off</th>
<th>Build organic matter</th>
<th>Retention of soil nutrients</th>
<th>Crop output</th>
<th>Timing</th>
</tr>
</thead>
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<tr>
<td>Humboldt forage rye</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Westerwolds ryegrass</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Undersowing grass</td>
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<td>✓</td>
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<tr>
<td>Cover crop</td>
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<tr>
<td>Chisel ploughing</td>
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<td>X</td>
<td>X</td>
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</table>

Humboldt Forage Rye

**SOWING INFORMATION:** Seedbed needs to be firm and well consolidated. Direct drill to a depth of 3-5cm (cross drilling will promote a thicker stand).

**SOWING RATE:** Between 160-185kg/ha (65-75kg/acre)

**FEEDING:**
- Crude Protein: 12%
- ME: 10 MJ/kg
Humbolt can be grazed, zero grazed or baled.

Westerwolds Ryegrass

**SOWING INFORMATION:** Westerwolds offers the highest yield of any ryegrass and is ideal for sowing after maize. It has good ground cover, enabling an early spring harvest of the subsequent crop.

**SOWING RATE:** 37kg/ha (15kg/acre)

**FEEDING:**
- Crude Protein: 15%
- ME: 10.6 MJ/kg
Westerwolds can be grazed, cut or baled.
### First Choice Varieties – Ranked by Earliness

<table>
<thead>
<tr>
<th>Maturity Group</th>
<th>Variety</th>
<th>Maturity Class *</th>
<th>FAO Rating *</th>
<th>DM% at harvest (at harvest)</th>
<th>E/I/L/H (%)</th>
<th>DM Yield (t/ha)</th>
<th>Relative DM Yield (%)</th>
<th>YLD Data</th>
<th>Agronomic Data</th>
<th>Year Listed</th>
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<tr>
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</tbody>
</table>

**Note:** Denotes only one year of eyespot data.

**Descriptive List for Forage Maize 2021: Favourable Sites**

<table>
<thead>
<tr>
<th>Variety</th>
<th>Year Listed</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESOLUTE</td>
<td>2020</td>
</tr>
<tr>
<td>BONNIE</td>
<td>2020</td>
</tr>
<tr>
<td>SY NORDICSTAR</td>
<td>2016</td>
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<tr>
<td>ASGAARD</td>
<td>2017</td>
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<td>LG30209</td>
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<td>FARMUNOX</td>
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<td>2019</td>
</tr>
</tbody>
</table>

**Eyespot Rating:**
- Select varieties with a score above 5.5 when eyespot is expected to be a problem. Fungicide sprays can control the disease for varieties with a low score.
- A higher score means plants remain green and healthy up to harvest. Lower scoring varieties may suffer from disease like Fusarium.

**BSPB/NIAB Descriptive List for Forage Maize 2021: Favourable Sites**

**Relative Dry Matter Yield and Agronomic Characteristics**

- **Yield Data**
  - Dry matter yield: Earlier varieties ensure crop maturity but may have lower yields.

- **Agronomic Data**
  - Early vigour: A strong, vigorous plant will quickly establish a good root system and leaf canopy.
  - Standing: Ability to remain upright at harvest.

- **Leaf Senescence**
  - A higher score means plants remain green and healthy up to harvest. Lower scoring varieties may suffer from disease like Fusarium.

- **Eyespot Rating**
  - Select varieties with a score above 5.5 when eyespot is expected to be a problem. Fungicide sprays can control the disease for varieties with a low score.

**Maturity**
- Choose varieties with an appropriate maturity. The lower the FAO rating, the earlier the variety will mature.

**New in 2021**
- **MC = Limagrain Estimation of Maturity Class and FAO rating**
- **# = Limagrain estimate of days earlier / later to harvest than Asgaard, the BSPB/NIAB control variety**
- **▲ = Denotes only one year of eyespot data**
Relative Starch Yield vs DM%: BSPB/NIAB Descriptive List for Forage Maize 2021: Favourable Sites

### VARIETIES FOR FAVOURABLE SITES

**Relative Starch Yield v DM%**

**BSPB/NIAB Descriptive List for Forage Maize 2021: Favourable Sites**

**INTERMEDIATE**

**EARLY**

**LATE**

**VERY EARLY**

**Red Varieties**

- First Choice
- Second Choice

**Maturity Group**

**FAO Range**

- **UNSUITABLE**: FAO 140-170
- **EARLY**: FAO 170-200
- **LATE**: FAO 200-220
- **VERY LATE**: FAO 220-250

- **Relative Starch Yield**: DM%

**Varieties for Favourable Sites**

**EARLY**

- AVITUS KWS
- CONCLUSION
- KWS CALVINI
- AMBITION
- GLORY
- PINNACLE
- PROSPECT
- RODRIGUEZ KWS
- RESOLUTE
- TROOPER
- RUBIERA KWS
- AUGUSTUS KWS
- CITO KWS
- KWS ARVID
- EMMERSON

**LATE**

- FARMUNOX
- LIROYAL
- BONNIE
- SY NORDICSTAR
- ABILITY
- ABRISSE
- LG30209
- LG31218
- LG31211
- EXPEDIA
- LIKEIT
- SMOOTHI CS
- AMBROSINI
- CRANBERRI CS
- MARCAMO
- CATHY

**VARIETIES FOR FAVOURABLE SITES**

- First Choice
- Second Choice

**DM (%)**

- 29 30 31 32 33 34 35 36 37 38

**FAO Rating**

- 230 200 170 140
# Relative Starch Yield and Content

**BSPB/NIAB Descriptive List for Forage Maize 2021: Favourable Sites**

## First Choice Varieties – Ranked by Starch Yield

<table>
<thead>
<tr>
<th>Variety</th>
<th>Maturity Class</th>
<th>FAO Rating</th>
<th>DM% (At harvest)</th>
<th>Earlier/Later to Harvest (# Days +/- Asgaard)</th>
<th>Starch Yield (t/ha)</th>
<th>Relative Starch Yield (%)</th>
<th>Starch (% at harvest)</th>
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**Why is starch important?**

Starch is a fundamental component of maize silage providing ‘rumen fermentable energy’ which fuels the microbial population in the rumen. A proportion of starch is also absorbed directly by the animal as glucose. Maize starch is a ‘safer’ source of energy than feed ingredients such as cereals, as fermentation rates can be slower, reducing the risk of acidosis.

**A high starch content is a good indicator of cob maturity at harvest.**

## Varieties for Favourable Sites

**Starch Yield**

Varieties are ranked within maturity groups by total starch tonnes produced per hectare.

**Starch % at harvest**

Varieties with a high starch content are especially important in rations with a lower percentage of maize fed (<50%). Maize starch balances the rapidly available energy and higher protein levels found in the grass silage.

**Why is starch important?**

A high starch content is a good indicator of cob maturity at harvest.
# ME Yield and Cell Wall Digestibility

**BSPB/NIAB Descriptive List for Forage Maize 2021: Favourable Sites**

<table>
<thead>
<tr>
<th>Maturity Group</th>
<th>Variety</th>
<th>Mean of the 4 &amp; 5 year varieties</th>
<th>Maturity</th>
<th>Energy Data</th>
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</table>

**Energy Data**

**ME yield**

ME yield is important in rations with a high maize silage inclusion rate >50%. Varieties are ranked within maturity groups by ME yield.

**ME (MJ/kg)**

Feeding performance and animal output is improved using varieties with the highest energy value (MJ/kg). ME content is directly impacted by the starch content and fibre digestibility (CWD) of the plant.

**Digestibility Data**

**Cell wall digestibility (CWD)**

Fibre digestibility impacts the amount of energy that can be derived from the rest of the maize plant that is not starch, i.e. the stover (leaves and stem). The digestibility of the stover is indicated by the cell wall digestibility.

CWD score is expressed as a percentage. CWD values have been converted to a 1-10 range, each unit representing an increase of 1%.

A 1% increase in CWD increases dry matter intake by 0.17kg per day, increasing milk yield by 0.25kg per day (Oba and Allen, 1999).
The impact of fibre digestibility

Cell walls impact directly on the digestibility of maize

Cell wall fibres are composed of cellulose, hemicellulose and lignin and account for around 40% of total plant dry matter found in the stem, leaves and husk. Lignin is present in relatively small quantities, but gives structural strength to the plant. Lignin is indigestible by the animal and is produced in greater quantities as the plant develops and matures.

Both cellulose and hemicellulose make up the majority of cell wall content and are potentially completely digestible by animals.

Is cell wall digestibility the same as fibre digestibility?

The digestibility of fibre (dNDF) in maize is measured by cell wall digestibility (CWD). CWD measures the extent to which animals can digest maize plant fibre. As lignin content increases, cell wall digestibility declines.

The higher the cell wall digestibility, the better the potential feed value of the plant.

Cell wall digestibility and diet formulation

The greater the proportion of maize silage in the diet, the more important the cell wall digestibility becomes.

The lower the digestibility of cell wall, the slower the rate of forage digestion. Varieties with poor cell wall digestibility impact feed intakes with slower digestion and reduced production.

A maize variety with improved cell wall digestibility can be formulated into the diet at a higher level than one with a lower cell wall digestibility, saving money on purchased concentrates.

Digestible fibre (dNDF)- the key to improved performance

**Dairy cows** need to maximise dry matter intake (DMI) if they are to absorb sufficient energy to maintain high levels of milk production.

**AD plants** can improve efficiency of gas production by increasing the highly degradable fibre content of maize silage to help speed passage through the digester.

*To maximise feed quality, select maize varieties with high cell wall digestibility.* More information on the difference in CWD between varieties can be found on pages 11 and 27.
### Varieties are usually made ‘Second Choice’ due to:
- Their low feeding qualities
- Below average yield potential
- Have a significant agronomic weakness, eg. Poor Standing Power
MAIZE FOR CRIMPING OR GRAIN

Growing maize for grain is an attractive cash crop option, and for arable farmers has the added benefit of breaking the cereals rotation, giving an opportunity to reduce blackgrass populations. An adjusted combine can be used to harvest the maize at around 30% moisture content.

Crimping or Grain?
Mature maize crops can be combined for their grain (kernels), from which crimped maize or dried grain can be produced.

Dried Grain Maize
Use: Dried grain maize is used in the bird and pet food industry. This small specialised market demands a high quality grain sample with kernels of an attractive yellow colour.
Yield: Grain yield 7-10 t/ha @ 15% MC
Recommended varieties: Yukon and LG30179

Crimped Maize
Use: Moist crimped grain maize of 25-35% MC for cattle and pig feed. For this larger market, maize grains are treated with a preservative to create a moist and digestible high energy feedstuff, with a metabolisable energy content of 14.0-14.5 MJ/kg DM.
Yield: Crimped yield 10-12 t/ha @ 65% DM.
Recommended varieties: Ambition, Conclusion, Gatsby, LG30179, Pinnacle and Yukon

Variety selection for grain and crimping use
To harvest maize for grain, the crop needs to reach a moisture content of 25-35% (DM of 65-75%) before being combined.
This means the crop has to be left longer in the field to dry down.
Important variety selection criteria:
• Disease resistance • Grain dry down • Standing power • High grain yield
Good cob cover will also reduce susceptibility to Fusarium infection.

Danish Farmers’ Union Grain Trial Results
Denmark has similar growing conditions to the UK, with an increasing area of maize grown for grain or crimping. The Danish Farmers’ Union (DFU) conducts extensive independent variety trials. In these, five LG varieties - Ambition, Gatsby, LG30179, Pinnacle and Yukon - have produced high grain yields demonstrating their suitability for both grain and crimping use. No independent grain trials are conducted in the UK.

<table>
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<th>Variety</th>
<th>YIELD t/ha (15% MC)</th>
<th>Relative Yield (%)</th>
<th>Grain Moisture (%)</th>
<th>Fusarium Infected Ears (%)</th>
<th>Fusarium Infected Stem (%)</th>
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<td>99</td>
<td>36.7</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Pinnacle</td>
<td>9.6</td>
<td>111</td>
<td>37.2</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Ambition</td>
<td>9.2</td>
<td>106</td>
<td>37.2</td>
<td>4.3</td>
<td>6.0</td>
</tr>
<tr>
<td>Amigrano</td>
<td>9.6</td>
<td>110</td>
<td>37.3</td>
<td>10.8</td>
<td>5.0</td>
</tr>
<tr>
<td>Gatsby</td>
<td>9.4</td>
<td>108</td>
<td>37.9</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Ranked by grain moisture - lowest to highest (*Selected varieties) Disease data 2011-2014 only
Maize can be successfully grown in most areas of the UK, but it is important to choose varieties suited to the growing conditions of your farm and can achieve a dry matter content of 30-32%.

As large areas of maize are needed to feed an AD plant, a range of varieties with different maturities should be sown. This enables harvesting before wet weather sets in and helps to avoid soil structure damage.

Recommended LG maize varieties

The extensive UK-based LG research programme has tested potential new varieties against current commercial ones at trial sites across the country and on working AD plants, for over five years.

LG have used a vigorous selection process to ensure that only the very best varieties are available to growers.

Check out the Feed Manager section of our brand new Maize Manager App, available early September from the Apple and Google Play stores.

Independent data on high yielding varieties suitable for very favourable sites

For the first time, independent data on late maturing and exceptionally high yielding varieties can be found on the newly published BSPB/NIAB ‘Varieties for Very Favourable Sites’. Data can be found on pages 36 to 38.

Some varieties used for AD do not appear on this list, but have been thoroughly tested in LG trials. Performance for these varieties can found in the LG AD trials charts on pages 33-35.
MAIZE FOR ANAEROBIC DIGESTION

Relative Dry Matter Yield v DM%
ANAEROBIC DIGESTION (AD) VARIETY TRIALS (2015-2019)

Relative ME Yield v DM%

![Graph showing the relative ME yield and DM% for various maize varieties in the context of anaerobic digestion trials from 2015 to 2019. The graph includes varieties such as LG30248, LG31235, MANTILLA, KEOPS, LG31207, LG31211, LG31218, LG30209, LG31205, RESOLUTE, CONCLUSION, GATSBY, AFFAGARD, FIELSTAR, AMBITION, AURELIUSKWS, LIKEIT, and AUTENSKWS. The graph also indicates the maturity groups and FAO ratings for the varieties.]
ANAEROBIC DIGESTION (AD) VARIETY TRIALS (2015-2019)

Cell Wall Digestibility v ME Yield

Red varieties

First Choice

Second Choice

LG31205
RESOLUTE
KEOPS
MANTILLA
LG31207
LG30248
LG31235

CONCLUSION
LG31218
LG31211
CRANBERRIES
GATSBY
PROSPECT
ASGAARD
FIELDSTAR
AMBITION
FABREGAS
AURELIUSKWS
AUTENSKWS
LIKEIT
P7034
P7892
P8200
P8000
TIBERIO
ESLEGOLAS
ESMETRONOM
CATHY
FREDERICO
P7524
LGE31207
LGE31218
LGE30248

MAIZE FOR ANAEROBIC DIGESTION

Cell Wall Digestibility

ME Yield

56.0
55.0
54.0
53.0
52.0
51.0
50.0
49.0
48.0
47.0

200,000
195,000
190,000
185,000
180,000
175,000

175,000
180,000
185,000
190,000
195,000
200,000
RED DRY MATTER YIELD V DM%
BSPB/NIAB Descriptive List for Forage Maize 2021: Very Favourable Sites

MAIZE FOR ANAEROBIC DIGESTION
# VARIETIES FOR VERY FAVOURABLE SITES

**BSPB/NIAB Descriptive List for Forage Maize 2021: Very Favourable Sites**

## Ranked by ME Yield

| Variety       | Maturity Group | Maturity Class | FAO Rating | DM% (At harvest) | EARLIER/LATER TO HARVEST (# Days +/- LG31211) | DM Yield (t/ha) | REL DM Yield (%) | Early Vigour (9=good, 1=poor) | Standing (At harvest 9=good, 1=poor) | Lodging (%) | Leaf Senescence (At harvest 9=good, 1=poor) | Eyespot Rating (9=good, 1=poor) | Starch Yield (t/ha) | REL Starch Yield % | Starch (% at harvest) | ME Yield (MJ/ha at harvest) | REL ME YIELD % | ME MJ/kg DM of fresh plant at harvest | Cell Wall Digestibility (%) minus 50 |
|---------------|----------------|---------------|------------|------------------|-----------------------------------------------|-----------------|------------------|-------------------------|-------------------------------------|-------------|-----------------------------------------|-------------------------|-------------------------|---------------------|-------------------------------|----------------------------------|
| LG31211       | Late           | 6             | 210        | 34.6             | 0                                             | 20.4            | 104              | 8.0                     | 5.9                                 | 5.9          | 5.7                                     | 4.8                      | 7.0                     | 108                 | 34.3                         | 242,165                        | 106                     | 11.9                           | 10.4                          |
| LG31205       | Late           | 5             | 190        | 34.1             | -2                                            | 19.7            | 100              | 7.5                     | 7.2                                 | 2.8          | 5.9                                     | 8.7                      | 6.8                     | 105                 | 34.5                         | 232,283                        | 102                     | 11.8                           | 9.2                           |
| SY KARThOUN    | Late           | 6             | 210        | 34.5             | 0                                             | 19.6            | 99               | 7.3                     | 5.8                                 | 6.1          | 6.1                                     | 7.9                      | 6.6                     | 102                 | 34.0                         | 225,392                        | 99                      | 11.5                           | 7.8                           |
| TIBERIO       | Late           | 5             | 220        | 34.2             | -1                                            | 19.3            | 98               | 7.4                     | 7.7                                 | 1.6          | 6.1                                     | 6.4                      | 6.4                     | 98                  | 33.1                         | 223,512                        | 98                      | 11.6                           | 8.3                           |
| ACTUAL        | Late           | 6             | 200        | 36.0             | 5                                             | 18.6            | 95               | 7.2                     | 7.3                                 | 2.6          | 4.7                                     | 6.5                      | 6.6                     | 102                 | 35.5                         | 220,855                        | 97                      | 11.8                           | 9.6                           |
| MARCAMO       | Late           | 5             | 210        | 34.3             | -1                                            | 19.2            | 97               | 7.0                     | 6.9                                 | 3.5          | 7.4                                     | 6.2                      | 6.2                     | 95                  | 32.3                         | 217,077                        | 95                      | 11.3                           | 5.7                           |
| LG30248       | Very Late      | 4             | 220        | 32.7             | -7                                            | 20.3            | 103              | 7.9                     | 5.8                                 | 6.1          | 7.0                                     | 5.2                      | 6.0                     | 93                  | 29.7                         | 236,454                        | 104                     | 11.7                           | 9.9                           |
| PETROSCHEKA   | Very Late      | 3             | 220        | 32.3             | -8                                            | 20.6            | 104              | 6.7                     | 7.0                                 | 3.3          | 6.0                                     | 5.8                      | 6.7                     | 103                 | 32.4                         | 235,371                        | 103                     | 11.5                           | 7.3                           |
| AGA GOLD      | Very Late      | 4             | 220        | 32.7             | -7                                            | 19.6            | 99               | 7.1                     | 7.1                                 | 3.0          | 6.2                                     | 7.0                      | 6.8                     | 104                 | 34.5                         | 232,378                        | 102                     | 11.9                           | 9.6                           |
| METRONOM      | Very Late      | 3             | 220        | 32.3             | -8                                            | 20.6            | 105              | 7.2                     | 7.8                                 | 1.1          | 6.6                                     | 8.4                      | 6.1                     | 94                  | 29.5                         | 232,295                        | 102                     | 11.3                           | 7.2                           |
| MOVANNA       | Very Late      | 4             | 220        | 32.8             | -6                                            | 19.5            | 99               | 7.1                     | 7.5                                 | 1.9          | 4.2                                     | 5.9                      | 6.5                     | 100                 | 33.5                         | 223,543                        | 98                      | 11.5                           | 7.0                           |
| RGT MULTIPLEX | Very Late      | 3             | 230        | 31.8             | -10                                           | 19.3            | 98               | 7.2                     | 7.7                                 | 1.6          | 5.8                                     | 6.8                      | 6.2                     | 96                  | 32.2                         | 219,132                        | 96                      | 11.4                           | 6.7                           |

**Note:**
- Mean of All Varieties: 33.5
- **Cell Wall Digestibility (%) minus 50**
- *MC = Limagrain Estimation of Maturity Class and FAO rating*
- # Limagrain estimate of days earlier / later to harvest than LG31211, the BSPB/NIAB control variety

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**MAIZE FOR ANAEROBIC DIGESTION**
NEW MAIZE MANAGER APP
Completely Revised and Expanded!

The Maize Manager is back and better than ever!

We have extensively re-developed the original Maize Manager app so that it now features 4 really handy tools for maize growers.

Harvest Manager - Conduct an in-field test to discover your crops dry matter. The app will advise the optimal harvest date to ensure maximum yield and feed quality.

Feed Manager - Discover the energy potential of a variety and also compare the performance between varieties. This tool will also advise you of the potential milk or gas value per hectare grown.

Maturity Manager - Input your postcode to find the correct maturity of maize for your location. Find out which FAO maturity rating is right for you and view variety recommendations for a safe harvest on your farm.

Sowing Manager - Recommends sowing rate and calculates the number of seed bags needed for your crop of maize. You can also check the thousand seed weight to ensure accurate sowing by your drill operator.

Find the Maize Manager app in the Apple or Google Play store.